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10/730,747	12/08/2003	Robert M. Koehl	105196-012000	2653

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EXAMINER	
DWIVEDI, VIKANSHA S	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/730,747
Filing Date: December 08, 2003
Appellant(s): KOEHL, ROBERT M.

Koehl, Robert M.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 7/20/2009 appealing from the Office action mailed 2/19/2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4767280	Markuson et al.	8-1988
6481973	Struthers	11-2002
6227808	McDonough	5-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 28-31 and 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Markuson et al. (U.S. Patent number 4,767,280) in view of Struthers (U.S. Patent number 6,481,973) McDonough (U.S. Patent number 6,227,808).

Markuson et al. discloses a control system for pumps for controlling various system parameters and automatically controlling the pumping unit (Column 3, lines 33-37). It discloses an electric motor (2), a microprocessor (4) and a controller (10), figure 1 shows the components of the control system. The microprocessor (4) utilizes a digital input to calculate limp mode/underload conditions of the system (Column 4, lines 23-26). The controller (10) can control the motor (2) upon detection of various predetermined conditions. The motor can be slowed down, shut down or restarted as needed (Column 6, lines 59-63). Figure 2 is an illustration of operating conditions being monitored by the controller. It shows the limp mode/underload (18, near 30) conditions with respect to the normal run as shown in Figure 2. Figure 2 also shows that the motor is turned off after running in limp mode/underload situation (See circa element number

30). Thus, providing the teaching for finally, shutting down the motor following limp mode.

Markuson et al. does not disclose the reduction of the operating frequency of the motor nor the specific use of current and limp current limit setting—although he does teach measuring the power to the motor and thus a limp power limit setting as opposed to a specific limp current limit setting.

As is consistent with the applicant's specification, the terms "limp mode" and "limp current limit" are interpreted to be a state of pump motor operation at reduced power or speed (reduced voltage and current to the motor), and the limit at which this state occurs, respectively. As is, if the sensed current, temperature, or voltage exceeds a predetermined limit value, (which constitutes a limp current, voltage, or temperature limit), the control circuit reduces speed of the motor by reducing power. The product of current and voltage equals power, it is obvious that the speed is reduced by reducing the power to the motor, i.e. reducing voltage or current.

Struthers specifically teaches the control of the frequency (Column 5, lines 9-30) and using the current as the parameter to control the motor. It would have been obvious to use operating frequency as one of the controlling parameter as it is easy to calculate and monitor and is accurate.

It would have been obvious to one of ordinary skill in the art to employ the current and a limp current limit setting as a well known component of limp power, in order to control the motor using a known equivalent in the art.

Struthers in view of Markuson et al. does not teach a pump for use within a pool and a spa.

McDonough teaches a pump for use within a pool and a spa (Col. 2 ll. 39-51).It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method for operating motor of a pump as disclosed by Struthers in view of Markuson et al. in view of McDonough to control and detect conditions in the pool or a spa (Summary of invention).

(10) Response to Argument

Applicant's arguments have been fully considered but they are not persuasive. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. In this case Markuson et al. (U.S. Patent number 4,767,280) in view of Struthers (U.S. Patent number 6,481,973).

McDonough (U.S. Patent number 6,227,808) teaches the claimed invention. It is not required that the prior art disclose or suggest the properties newly-discovered by an applicant in order for there to be a prima facie case of obviousness. Moreover, as long as some motivation or suggestion to combine the references is provided by the prior art taken as a whole, the law does not require that the references be combined for the reasons contemplated by the inventor. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. In this case

Markuson et al. discloses a control system for pumps for controlling various system parameters and automatically controlling the pumping unit (Column 3, lines 33-37). It discloses an electric motor (2), a microprocessor (4) and a controller (10), figure 1 shows the components of the control system. The microprocessor (4) utilizes a digital input to calculate limp mode/underload conditions of the system (Column 4, lines 23-26). The controller (10) can control the motor (2) upon detection of various predetermined conditions. The motor can be slowed down, shut down or restarted as needed (Column 6, lines 59-63). Figure 2 is an illustration of operating conditions being monitored by the controller. It shows the limp mode/underload (18, near 30) conditions with respect to the normal run as shown in Figure 2. Figure 2 also shows that the motor is turned off after running in limp mode/underload situation (See circa element number 30). Thus, providing the teaching for finally, shutting down the motor following limp mode.

Markuson et al. does not disclose the reduction of the operating frequency of the motor nor the specific use of current and limp current limit setting—although he does teach measuring the power to the motor and thus a limp power limit setting as opposed to a specific limp current limit setting. As is consistent with the applicant's specification, the terms "limp mode" and "limp current limit" are interpreted to be a state of pump motor operation at reduced power or speed (reduced voltage and current to the motor), and the limit at which this state occurs, respectively. As is, if the sensed current, temperature, or voltage exceeds a predetermined limit value, (which constitutes a limp current, voltage, or temperature limit), the control circuit reduces speed of the motor by

reducing power. The product of current and voltage equals power, it is obvious that the speed is reduced by reducing the power to the motor, i.e. reducing voltage or current.

Struthers specifically teaches the control of the frequency (Column 5, lines 9-30) and using the current as the parameter to control the motor. It would have been obvious to use operating frequency as one of the controlling parameter as it is easy to calculate and monitor and is accurate.

It would have been obvious to one of ordinary skill in the art to employ the current and a limp current limit setting as a well known component of limp power, in order to control the motor using a known equivalent in the art. Struthers in view of Markuson et al. does not teach a pump for use within a pool and a spa. McDonough teaches a a pump for use within a pool and a spa (Col. 2 ll. 39-51).It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method for operating motor of a pump as disclosed by Struthers in view of Markuson et al. in view of McDonough to control and detect conditions in the pool or a spa (Summary of invention).

Also with regard to claim limitation within up to about 30 seconds McDonough teaches a control circuit 26 for use with a pump 20 for a spa system. The control circuit 26 includes a pressure sensor 70 to monitor pressure at- the input side of the pump. The control circuit 26 also includes an on/off switch 40 which can be activated by a user to turn the pump 20 on. Once the pump 20 is turned on, a baseline pressure is acquired. If during operation, a decrease or increase in pressure from the baseline pressure occurs; **the pump 20 immediately shuts** off (which is within 30 seconds).

McDonough, Abstract; col. 3, lines 51-52; col. 4, lines 17-22; col. 7, lines 11-15; col.7, lines 43-50.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Vikansha S Dwivedi/

Examiner, Art Unit 3741

Conferees:

/Michael Cuff/

Supervisory Patent Examiner, Art Unit 3741

/Thomas Denion/

Supervisory Patent Examiner, Art Unit 3748